

BULLETIN OF THE UNIVERSITY OF UTAH

Volume 34

August 12, 1943

No. 3

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*BIOLOGICAL SERIES, Vol. VIII, No. 1*



PUBLISHED BY  
THE UNIVERSITY OF UTAH  
SALT LAKE CITY

# NEW TEXAS TERRESTRIAL ISOPODS WITH NOTES ON OTHER SPECIES

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In a previous paper (1) the authors reported new records and gave descriptions and figures of new species of terrestrial Isopods. Further studies of their collections reveal additional material of considerable interest, and some of the findings are recorded here. It is believed that careful collecting in the southern and western part of the United States will bring to light many additional forms.

The species described herein as new were taken largely while collecting arachnids and myriopods under logs, rocks or in leaf mold. Since relatively little is known regarding the distribution even of some of the better known forms, all unpublished records in the authors' collection are included.

The types described as new in this paper are deposited in the Zoological Collections of the University of Utah. Other species of *Porcellio* or allied genera which could not be assigned definitely at this time are held for future consideration. Several of these will likely prove new.

## TRICHONISCIDAE

**Haplophthalmus** Schöbel, 1860

**Haplophthalmus danicus** Budde-Lund, 1879

This species whose type locality is in Sicily, has been reported from New Jersey, Maryland, Indiana, and in Philadelphia at quarantine. Numerous specimens were taken in Salt Lake City, Utah, in Nibley Park, in Memory Grove, and in the city proper in damp leaf mold in April and July 1942. Its occurrence throughout the state will likely be shown with more intensive collecting.

**Protrichoniscus** Archangel, 1932

**Protrichoniscus heroldi** Archangel, 1932

California: Calaveras County, six miles west of Jackson. Tulare County, twelve miles northeast of Hammond at 4000 feet. Santa Cruz County, twelve miles south of Los Gatos. Isabella County. Numerous specimens were taken at the above localities in March 1941.

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(1) Mulaik, Stanley and Dorothea, Bull. of Univ. of Utah, Biol. Ser. Vol. VI, No. 7, January, 1942.

## ONISCIDAE

**Porcellio Latreille, 1804****Porcellio conchus**, new species

Plate I, ff. 1 to 5.

Length about 8 mm., width 3.1 mm.; body moderately convex, the sides are nearly parallel. The abdomen is scarcely narrower than the thorax, the first two segments with the lateral ends not visible from above. The head length in width is 2.5. The frontal lobe is large, moderately rounded, its upper surface is concave. The anterio-lateral lobes are rounded and projecting horizontally.

The eye is small, consisting of about eight ocelli located more than its greater diameter from the anterior and less than half of its diameter from the rear border of the anterio-lateral lobes. The antennae are short, being less than a third of the body length. The proximal segment of the flagellum is less than half of the distal. The legs are rather stout.

The telson is wider than long, the lateral margins are sinuate, the posterior portion is acute with a rounded tip. The dorsal side is concave. The inner branch of the uropods scarcely reaches the tip of the telson, and is surmounted by a number of fine bristles; the outer branch is broad and flattened dorso-ventrally. The external male pleopods I and II are as figured. The external pleopods III, IV, and V have ten to twelve ventrally projecting bristles.

The color above is pale yellow with a faint marbling of a darker pigment; pale beneath. The head is considerably roughened with rounded tubercles. The dorsum is covered with minute granular bristles discerned under higher magnification.

Texas: Concho County, ten miles west of Eden, male holotype, female allotype, male and female paratypes; five miles west of Eden, three male and five female paratypes, in December 1939. Val Verde County, Langtry, two males, two females, June 3, 1941.

This species can be distinguished by its small size, much larger frontal lobe, and the different surface armature. From the other *Porcellio* species discussed in this paper it differs in its smaller size, paler color and other details shown in the figures.

**Porcellio grandeus**, new species

Plate I, ff. 6 to 12.

Length of female 12 mm., width 5 mm. Abdomen is one fourth of the total length. The head is half as long as wide, relatively small, depressed, set well back into the thorax, about two-fifths as wide as the body. The lateral lobes are well developed, rounded, projecting anterio-laterally, concave above. The middle lobe is moderate, broadly obtuse. The lateral fourth of the posterior border of the first thoracic segment curves slightly back near the postero-lateral corner forming an acute angle. The forward curve decreases in the succeeding seg-

ments, and is absent in the fourth. The backward projecting corners are increasingly longer toward the back. The posterior corners of the abdominal segments are long, acute, projecting posteriorly. The head and body is comparatively smooth. Minute tubercles are visible only under higher magnification.

The antennae are slender, about equal to the width of the body. The flagellum consists of two segments, the basal article is scarcely longer than the terminal one without the bristles, and together these are shorter than the peduncle.

The tracheal cleft in both the first and second external pleopods is much deeper than in *P. scaber*, *P. laevis* or other species of the genus discussed in this paper.

The eyes are moderately large, consisting of about 24 ocelli.

The telson is concave above, wider than long (5-4). The posterior triangular portion is 70 percent of the total length. The width of the anterior portion of this triangle is half that of the telson viewed from above. The inner branch of the uropods extends beyond the telson. The tip of this is bent upward, and covered particularly on the ventro-lateral sides with fine bristles. The ground color is purple with scattered darker spots on the head and body. On the dorsum above the coxae is a lighter area which gives the species a distinct lateral stripe. There is also a light stripe formed by the light lateral margin of the epimera. A stripe is also present on the mid-dorsal line which, however, is indistinct anteriorly.

Texas: Starr County, five miles east of Rio Grande City, female holotype with about twenty embryos in the brood pouch, September, 1939.

### ***Porcellio alpinus*, new species**

Plate II, ff. 13 to 20.

Female 8.6 mm. long, the abdomen is about one fifth of the total. The head is considerably wider than long, moderately set back into the thorax. The frontal margin forms two large lateral lobes extending obliquely forward. They are rather square with rounded corners, and the dorsal surface is distinctly concave. Between these lobes the frontal margin forms a large distinctly upcurved, concave, rounded lobe which extends forward beyond a line between the tips of the lateral lobes. The greatest width across the head is through the antero-lateral corners of the lobes. The head is roughened by rounded tubercles which also occur in diminishing numbers posteriorly on the body to the third thoracic segment. The eyes are small, composed of about twelve poorly pigmented ocelli.

The body is convex, oblong-oval. The side plates of the thorax and abdomen are moderate, sloping outward, the posterior corners are acutely produced backward. Viewed from above, the lateral margin of the first thoracic segment forms almost a straight line.

The antennae are moderate in thickness; the flagellum equals the peduncle and consists of two articles of which the basal is less than

half of the terminal one on the end of which is a short fine bristle. The first antennae are minute, consisting of three segments.

Only the first and second opercular pleopods have trachea. *Porcellio alpinus* can be distinguished by the large frontal lobe, the shape of the telson, and the distribution of the tubercles on the head and anterior body.

Texas: Brewster County, nine miles west of Alpine, female holotype with about ten embryos in the brood pouch. June 2, 1941.

### ***Porcellio scaber* Latreille, 1804**

Wyoming: Natrona County, Casper, numerous specimens, August, 1941.

Utah: Carbon County, Price. Numerous specimens collected by Harold Higgins, March 1942 and by Marie Higgins, August 1942. Utah County, Provo, Numerous specimens collected by Marie Higgins in April and May 1942. Salt Lake County, Lower Reservoir, Parley's Canyon. Several specimens were taken on July 31, 1942.

### ***Porcellio ragusae* Dollfus, 1896**

Several specimens of an Isopod sent to Van Name by the authors were assigned by him to *P. ragusae* in 1939. This species was originally described from specimens taken near Palermo, Sicily. Van Name's excellent description and discussion of the Texas form nevertheless leaves some doubt as to its true identity which will be cleared up only when European specimens are available for comparison. The authors have secured additional specimens which shows the species to be quite common. The largest specimen secured measured about 12 mm.

Texas: Concho County, ten miles west of Eden, December 1939, four females, one male found with *Porcellio conchus*, new species. Hidalgo County, Edinburg, January 8, 1939, a male; La Joya, March 14, 1939, five males and four females. Starr County, five miles east of Rio Grande City, January 21, 1939, male and two females; September 11, 1940, immature female, and November 11, 1936, male and three females.

### ***Porcellionides* Miers, 1877**

#### ***Porcellionides mulaiki* Van Name, 1936**

Texas: Brooks County, 16 miles north of Alice, December 1939. Cameron County, Los Fresnos, May 1939, Brownsville, May 1939, northeast of Harlingen, September 1934, and east of Harlingen, L. I. Davis Collector, January 1936. Chambers County, 13 miles north of High Island under logs on the beach in September 1940. Harris County, Houston, April 1940, J. H. Swanson Collector. Hidalgo County, Edinburg, November 1934 and March 1934. Live Oak County, Three Rivers, December 1939. Nueces County, Driscoll, March 1936. Starr County, Rio Grande City, May 1937.

Many specimens were taken at the above localities.

***Porcellionides virgatus* (Budde-Lund), 1885**

Texas: Jim Wells County, 16 miles north of Alice with *Cubaris apachcus* Mulaik, December 1939.

Louisiana: Jefferson County, La Fitte, August 1940, Allen Mulaik, Collector.

Mississippi: Scott County, Morton. Harrison County, North Long Beach. Stone County, 10 miles south of Wiggins. Rankin County, 5 miles east of Jackson. All were taken in August 1940.

***Porcellionides pruinus* (Brandt), 1833**

Utah: Salt Lake County. Numerous specimens were taken around and in Salt Lake City in 1942. Tooele County, 5 miles north of Ibopah at 5175 feet, numerous specimens taken on May 20, 1942 by Harrold Higgins. South of Grantsville in South Willow Canyon in the Stansbury Mountains. Numerous specimens were taken on June 27 and July 4, 1942.

***Porcellionides davis*, new species**

Plate II, ff. 21 to 27.

This is a small species; length about 5 mm., width 2 mm., the abdomen is less than a fifth of the total. Color in a pale yellow with a faint marbling of a purple pigment. The region over the coxae is lighter, giving a striped effect. The venter is unpigmented. The uropods are a brighter yellow with the pigment lacking in most specimens.

The dorsum is slightly convex, the sides are nearly parallel. The head is broader than long (11 to 7); the front lobe is more pronounced than in *P. pruinus*. The eyes are moderate in size and consist of about sixteen ocelli. The antennae are slender. The flagellum consists of two segments of which the basal is about a half as long as the terminal one. These together equal the peduncle.

Viewed from above, the lateral edges of the thoracic segments are almost straight in the first three and these form approximately right angles with the rear margins. The middle three fifths of the rear margin of the first segment is straight, only the posterior corner is broadly rounded. In the third segment this margin forms a straight line all the way across except at the slightly rounded corners.

The telson is nearly three times as wide as long, triangular, the lateral margins and dorsal surface concave. Its tip is rounded. The external branches of the uropods are cylindrical and about half longer than the telson. The inner branches are flattened laterally and extend but little beyond the telson.

This species only superficially resembles other *Porcellionides*. From *P. pruinus* it can be distinguished by the more rounded anterior angles of the first thoracic segments, the proportionately wider abdomen, the straighter rear margins of the first three thoracic segments, and in the antennal flagellum. From *P. quadriseriatus* it differs in having the abdomen little darker than the rest of the body, by the

almost oval first exopods in the male, and the relative absence of rugae or tubercles except for a slight roughness on the head. The telson is somewhat darker than other body regions, and the external branches of the uropods are little or not at all pigmented.

Texas: Kerr County, 16 miles south of Kerrville, June 1941, male holotype, female allotype, and several paratypes by Mr. Hal Davis, and several paratypes by the authors. Uvalde County, 26 miles northwest of Uvalde, eight paratypes, September 1940. Comal County, Spring Branch, ten paratypes, July 1941.

**Tracheoniscus Verhoeff, 1917**

**Tracheoniscus rathkei (Brandt), 1833**

A female specimen of this species was taken at Nibley Park in Salt Lake City in April 1942. The trachea in the exopods were typical for the genus and with other characters apparently justifies its separation from *Porcellio*.

**Rhyscotus Budde-Lund, 1885**

**Rhyscotus texense (Richardson), 1905**

Texas: Cameron County, East of Harlingen, January 1936, L. I. Davis, collector.

**Cyclisticus Schnitzler, 1853**

**Cyclisticus convexus (DeGeer), 1878**

Colorado: Larimer County, Tedd's Place, August 1941. Allen Mulaik collector.

Montana: Gallatin County, Three Forks, August 1941.

Utah: Carbon County, Price, 5500 feet, August 17, 1942, Marie Higgins collector. Morgan County, Morgan, May 1941, Allen Mulaik collector. Cache County, Logan Canyon, Preston Picnic Grounds, August 1941. Salt Lake County, Salt Lake City, October 1939 and July 1942. Utah County, Wildwood, October 1940.

Wyoming: Natrona County, Casper, August 1941.

**Trichorhina Budde-Lund, 1908**

**Trichorhina triocis, new species**

Plate III, ff. 28 to 36.

This is a small species. The male is 2.4 mm. long, 0.85 mm. wide. The abdomen is moderately convex; the sides are nearly parallel. The abdomen is about one fourth of the body length. The head width is two and a half times the length; the anterio-lateral lobes on the side of the head are moderate, rounded. The eyes are small, consisting of three ocelli, slightly pigmented. The antennae are short and thick; the flagellum consists of two segments of which the distal is about two and a half times the proximal one and surmounted by a bristle.

The first four thoracic segments are sub-equal in length, the last three decreasing somewhat in length posteriorly. The lateral ends of

the segments are rounded in the first three and increasingly angular and produced backwards posteriorly. The lateral borders of the first two abdominal segments are not visible from above; the others with the lateral plates well developed, tapering, pointed, and directed more or less posteriorly.

The telson is about as wide as long, triangular, with the lateral borders concave, the tip scarcely extending beyond the inner branches of the uropods. These latter are rounded and tipped with two curved bristles.

The color is pale yellow with practically no dark pigment above or below.

Scattered over most of the dorsum of the body and parts of the appendages are relatively large backwardly curving, fan-shaped scales from which arise spines as figured. These scales tend to an arrangement in transverse rows. On the underside of the appendages are small dome shaped tubercles surmounted by bristles.

No evidence of trachea in the external pleopods was found, though the small size of the specimen and the lack of extensive material made a critical examination impractical.

While the genus *Trichorhina* is somewhat poorly delimited, the present species apparently falls within the forms encompassed by the genus as defined by Van Name (1935). The two segmented flagellum, the body ornamentation, the absence of trachea in the external pleopods, and the small size make such a placement advisable at present.

Texas: Hidalgo County, Edinburg. Male holotype, September 24, 1938. Zapata County, 32 miles southeast of Laredo on the cliffs overlooking the Rio Grande. Male paratype, September 1939.

## ARMADILLIDIIDAE

### *Armadillidium* Brandt, 1830

#### *Armadillidium vulgare* (Latreille), 1804

This species will most likely be found in every state in the west. Numerous specimens were taken at all of the localities listed.

California: Tulare County, 4 miles north of Badger, March 1941.

Louisiana: Richland County, Delhi, August 1940.

Utah: Cache County, Logan Canyon, August 1941. Carbon County, Price, elevation 5500 feet; H. Higgins collector, August 17, 1942. Kane County, Kanab, C. Greenhalgh, collector, April 1942. Utah County, Provo, September 2, 1942, Harold and Marie Higgins, collectors.

Wyoming: Natrona County, Casper, August, 1941.

## CUBARIDAE

### *Cubaris* Brandt, 1833

#### *Cubaris apacheus* Mulaik, 1941

Texas: Jim Wells County, north of Alice at the type locality, July 1941, numerous males and females.

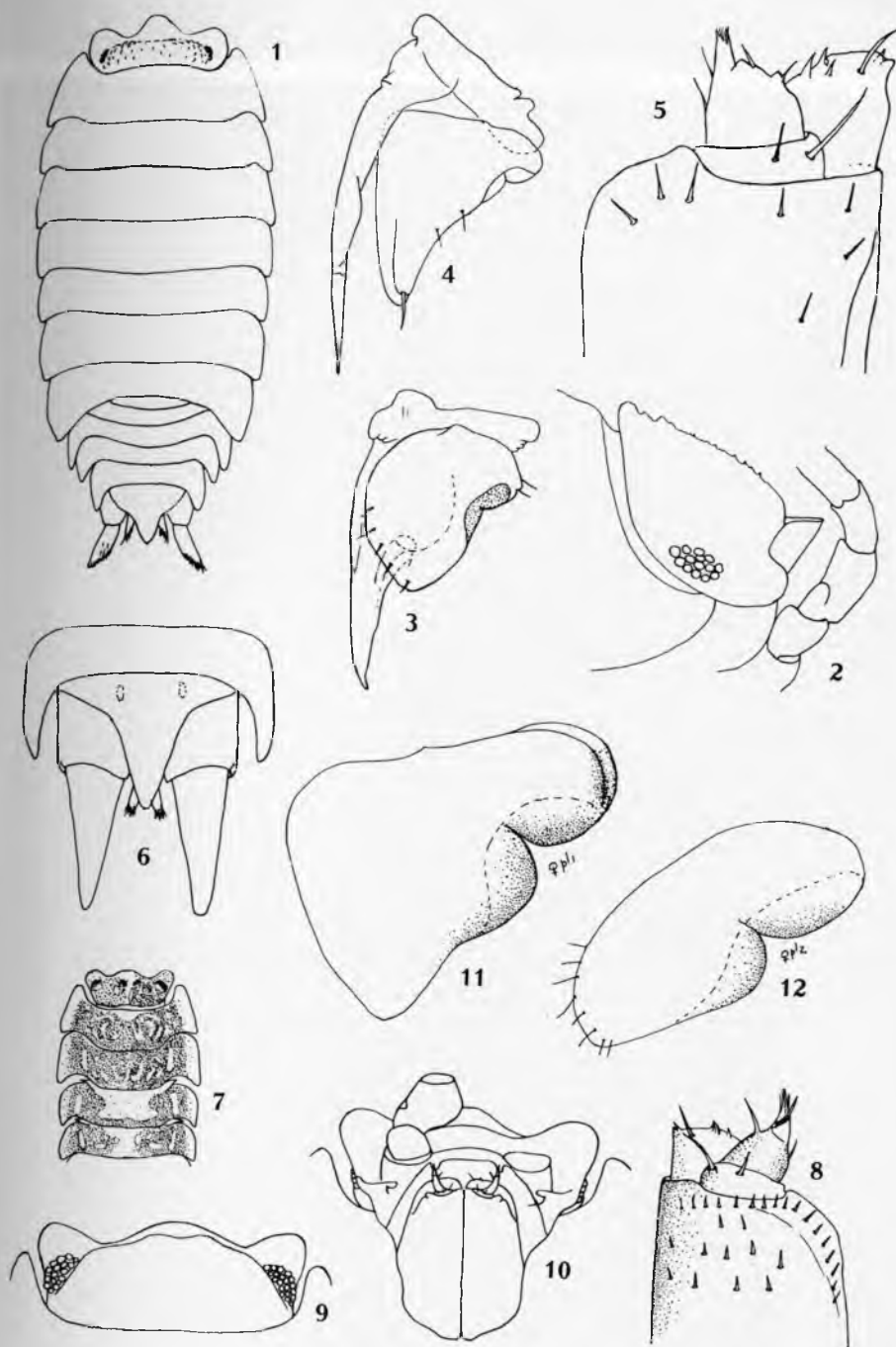


**Plate I***Porcellio conchus*, new species

1. Dorsal view of female
2. Lateral view of head of same
3. Male pleopod I
4. Male pleopod II
5. Right maxilliped

*Porcellio grandeus*, new species

6. Telson and uropods of female, dorsal view
7. Dorsal view of anterior part of body
8. Left maxilliped
9. Dorsal view of head
10. Ventral view of head
11. Male pleopod I
12. Male pleopod II

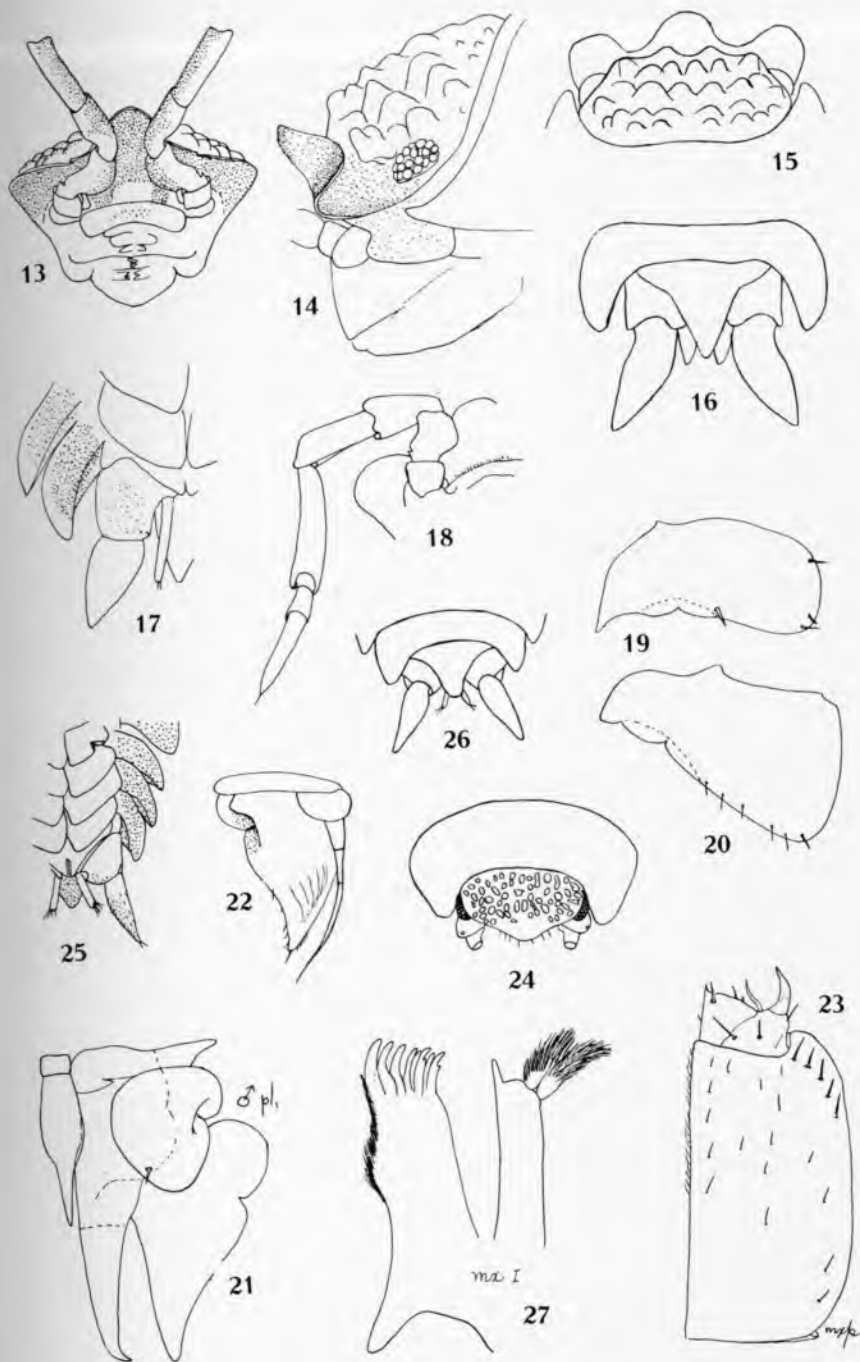


**Plate II***Porcellio alpinus*, new species

13. Anterior view of head of female
14. Lateral view of head, left side
15. Dorsal view of head
16. Dorsal view of posterior of abdomen
17. Ventral view of posterior of abdomen, right side
18. Right antenna, ventral view
19. Pleopod I
20. Pleopod II

*Porcellionides davisi*, new species

21. Male pleopod I
22. Male pleopod II
23. Left Maxilliped
24. Anterior view of head
25. Ventral view of abdomen, left side
26. Posterior part of abdomen, dorsal view
27. Maxilla I



**Plate III**

*Trichorhina triocis*, new species

- 28. Dorsal view of head
- 29. Ventral view of head
- 30. Maxilliped
- 31. Leg VIII, right side, dorsal view
- 32. Lateral margin of segment I, ventral view showing arrangement of fan bristles
- 33. Some of the fan bristles on the body
- 34. Ventral view of the male uropod
- 35. Pleopod II, male
- 36. Dorsal view of the abdomen

